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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,012

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William E. Eckles

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05/03/2010

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EXAMINER

WONG, EDNA

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

05/03/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,012	<b>Applicant(s)</b> ECKLES ET AL.	
	<b>Examiner</b> EDNA WONG	<b>Art Unit</b> 1795	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,6 and 8-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 7 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :August 29, 2006 and November 20, 2009.

### ***Election/Restrictions***

Applicant's election without traverse of Group I, and the species of the second repeating unit of 2A and the first repeating unit of claim 2, claims **1-2, 5 and 7**, in the reply filed on March 29, 2010 is acknowledged.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims **3-4, 6 and 8-19** are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1-2 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **WO 00/14305** ('305) in view of **Sonntag et al.** (US Patent No. 6,652,728 B1) and **Fenyés et al.** (US Patent No. 4,506,081).

*Sonntag et al.* is the English equivalent of WO 00/14305.

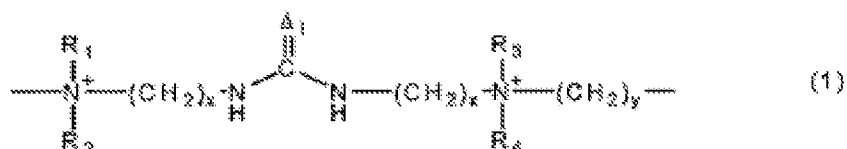
Sonntag teaches a zinc or zinc alloy electroplating bath comprising:

(i) zinc ions (= a source of zinc ions and optionally a source of further metal ions)  
[col. 2, lines 63-64] and

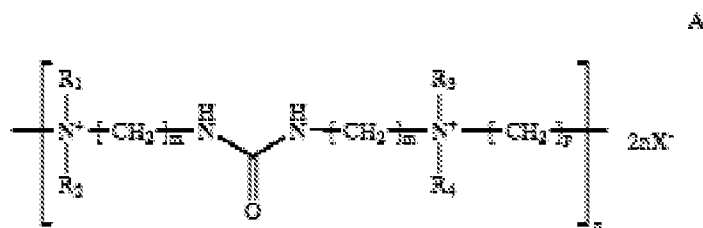
(ii) a brightening agent, the brightening agent comprising at least one polyamine

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or a mixture of polyamines, the at least one polyamine or mixture of polyamines including a first repeating unit that has the general formula:



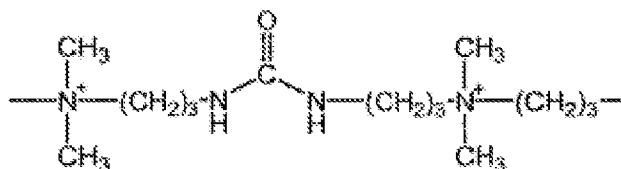
where  $\Delta_1$  is O, N, or S;  $\Delta_2$  is O, N, or S, and  $\Delta_1 \neq \Delta_2$ ; x is an integer from 2 to 6; y is an integer from 1 to 6; z is an integer from 1 to 6;  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$ , and  $\text{R}_4$ , which is the same or different, is methyl, ethyl, isopropyl, n-propyl, hydroxyethyl, or  $-\text{CH}_2\text{CH}_2(\text{OCH}_2\text{CH}_2)_m\text{OH}$ ; m is a number between 0-6;  $\text{R}_5$  represents a group of atoms necessary to complete a heterocyclic compound having a five or six membered ring containing at least two nitrogen atoms; and  $\text{R}_6$  is nothing or an alkyl group (= a polymer soluble in the bath and having the general formula A:



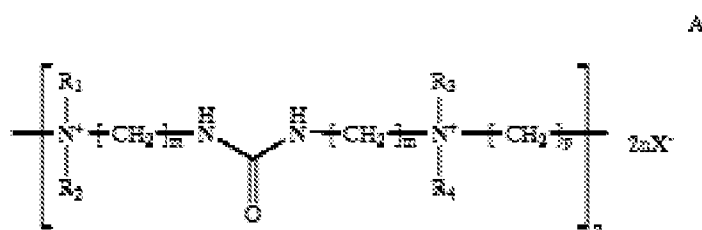
wherein m has a value 2 or 3, n has a value of at least 2,  $\text{R}_1$ ,  $\text{R}_2$ ,  $\text{R}_3$  and  $\text{R}_4$ , which may be the same or different, each independently denote methyl, ethyl or hydroxyethyl, p has a value in the range from 3 to 12, and  $\text{X}^-$  denotes  $\text{Cl}^-$ ,  $\text{Br}^-$  and/or  $\text{I}^-$  [col. 2, line 66 to col. 3, line 15].

The first repeating unit having the following formula:

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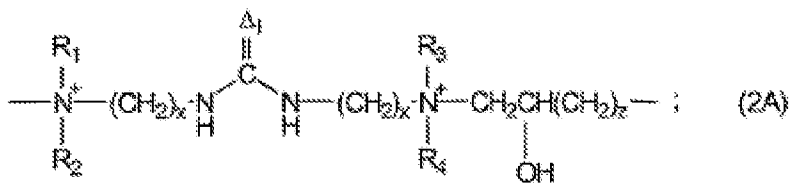
(= a polymer soluble in the bath and having the general formula A:



wherein m has a value 2 or 3, n has a value of at least 2, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub>, which may be the same or different, each independently denote methyl, ethyl or hydroxyethyl, p has a value in the range from 3 to 12, and X<sup>-</sup> denotes Cl<sup>-</sup>, Br<sup>-</sup> and/or I<sup>-</sup>) [col. 2, line 66 to col. 3, line 15].

The bath of Sonntag differs from the instant invention because Sonntag does not disclose the following:

a.      Wherein the bath comprises a second repeating unit selected from the group consisting of:



, as recited in

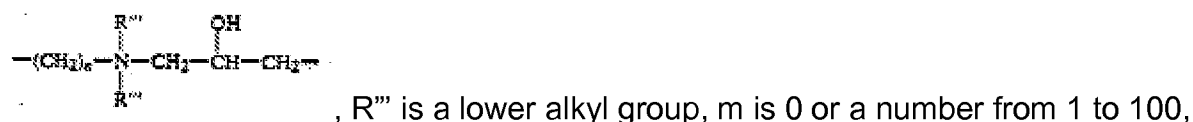
claim 1.

Sonntag teaches that the bath contains conventional additives (col. 3, line 17).

**Fenyés** teaches polyquaternary ammonium compounds useful as corrosion inhibitors. The compounds have the structure:



wherein R is  $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ | \quad | \\ \text{N}^+ - \text{Q} - \text{N}^+ \\ | \quad | \\ \text{CH}_3 \quad \text{CH}_3 \end{array} \text{Cl}^- \text{Cl}^-$ , Q is  $-(\text{CH}_2)_m - \text{N}(\text{H}) - \text{C}(=\text{O}) - \text{N}(\text{H}) - (\text{CH}_2)_n -$ , A is  $\begin{array}{c} \text{CH}_3 \quad \text{CH}_3 \\ | \quad | \\ \text{N}^+ - \text{Q} - \text{N}^+ \\ | \quad | \\ \text{CH}_3 \quad \text{CH}_3 \end{array} \text{Cl}^- \text{Cl}^-$ , B is

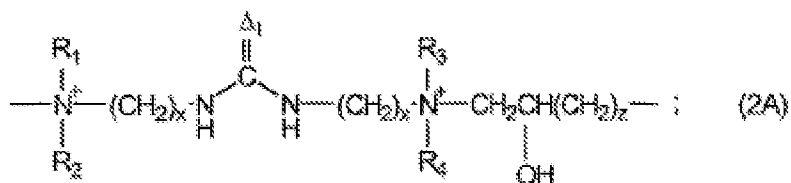


and n is 2 or 3 (col. 1, lines 5-59).

The corrosion of metals in water is an electrochemical process that occurs because of difference in electrical potential between points on the metal surface or between two metal surfaces. This difference in potential between points on the metal surface can be due to several factors such as: differences in composition, differences in crystal size, crystal orientation, discontinuous oxide film due to air or heat treatment, stress, superficial foreign matter, inclusions of dissimilar material and alloys, differences in the concentration of dissolved oxygen as compared with another, and the contact of dissimilar metals. For control of corrosion in aqueous systems concentrations of 0.5 to 500 ppm based on the weight of water treated are suitable with a preferred concentration range of 0.5 to 50 ppm. The products of this invention may be used alone or in combination with other known corrosion inhibitors (col. 4, lines 36-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the bath described by Sonntag with wherein the bath comprises a second repeating unit selected from the group consisting of:

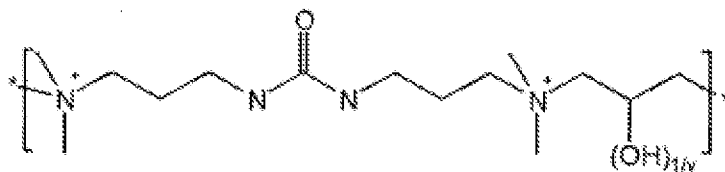
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because such a

compound would have controlled the corrosion of metals in water in an electrochemical process as taught by Fenyes (col. 1, lines 5-59; and col. 4, lines 36-52).

b.      Wherein the polyamine having the following general formula:



where v is an integer greater than 1, as recited in claim 7.

Fenyes teaches that the compounds have the structure:



wherein R is  $\begin{array}{c} CH_3 \\ | \\ -N^+-Q-N^+- \\ | \quad | \\ CH_3 \quad Cl^- \end{array}$ , Q is  $-(CH_2)_n-NH-C(=O)-NH-(CH_2)_n-$ , A is  $\begin{array}{c} CH_3 \\ | \\ -N^+-Q-N^+- \\ | \quad | \\ CH_3 \quad Cl^- \end{array}$ , B is

$\begin{array}{c} R''' \\ | \\ -(CH_2)_n-N-CH_2-CH-CH_2- \\ | \\ R''' \end{array}$ ; R''' is a lower alkyl group, m is 0 or a number from 1 to 100, and n is 2 or 3 (col. 1, lines 5-59).



### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claim **5** defines over the prior art of record because the prior art does not teach or suggest wherein the first repeating unit and the second repeating unit being in the same polymer chain.

The prior art does not contain any language that teaches or suggests the above. *Sonntag et al.* teach the first repeating unit and *Fenyés et al.* teach the second repeating unit. However, *Sonntag et al.* and *Fenyés et al.* do not teach that the first repeating unit and the second repeating unit are in the same polymer chain. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a *prima facie* case of obviousness cannot be established.

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Citations***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Creutz, deceased et al.** (US Patent No. 4,169,771) is cited to teach a cationic alkylated polymer brightener prepared by reacting imidazole, epichlorohydrin and 3-

chloro-2-hydroxy propyl trimethyl ammonium chloride (col. 3, Example 2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Edna Wong/  
Primary Examiner  
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April 29, 2010